

(19)



JAPANESE PATENT OFFICE

PATENT ABSTRACTS OF JAPAN

(11) Publication number: **11140580 A**

(43) Date of publication of application: **25.05.1999**

(51) Int. Cl. **C22C 38/00**
B22D 11/00, C22C 38/58

(21) Application number: **09301783**
(22) Date of filing: **04.11.1997**

(71) Applicant: **NIPPON STEEL CORP**
(72) Inventor: **ASAHI HITOSHI**
TAMEHIRO HIROSHI
HARA TAKUYA
UEMORI RIYUUJI

(54) **CONTINUOUSLY CAST SLAB FOR HIGH STRENGTH STEEL EXCELLENT IN TOUGHNESS AT LOW TEMPERATURE, ITS PRODUCTION, AND HIGH STRENGTH STEEL EXCELLENT IN TOUGHNESS AT LOW TEMPERATURE**

(57) Abstract:

PROBLEM TO BE SOLVED: To inhibit the coarsening of austenite on reheating of a cast slab and to obtain a high strength hot rolled steel plate having fine-grained structure and excellent toughness at low temperature by specifying the area ratio of transgranular transformed ferrite in martensitic and bainitic structures of a cast slab.

SOLUTION: A steel composition, consisting of, by mass ratio, 0.03-0.10% C, <0.6% Si, 1.2-2.5% Mn, <0.005% P, <0.003% S, 0.1-1.0% Ni, 0.15-0.60% Mo, 0.005-0.10% Nb, 0.001-0.006% N, 0.005-0.006% Ti, and the balance essentially Fe and containing, if necessary, one or ≥ 2 kinds among <0.10% Cr, <1.0% Cu, <0.10% V, 0.0005-0.0020% B, <0.006% Ca, <0.02% REM, <0.006% Mg, and <0.10% Zn, is provided. Simultaneously, a cast slab, in which the area ratio of transgranular transformed ferrite in martensitic and bainitic structures is regulated to $\geq 10\%$, is provided. Further, this cast slab is formed into steel plate by controlled rolling.

COPYRIGHT: (C)1999,JPO